

B3

12. (Amended.) The electret of claim 1, wherein the porous material comprises a nonwoven web; and wherein the first thermoplastic polymer is selected from the group consisting of polyolefin and polyamide polymers.

---

**Remarks**

Applicant's attorney thanks the Examiner for his comments. This amendment is responsive to the U.S. Patent and Trademark Office Action mailed May 9, 2001. Pursuant to 37 C.F.R. §1.111, reconsideration of the present application in view of the foregoing amendments and the following remarks is respectfully requested.

Applicant's attorney further acknowledges the provisional election to Claims 1-11 of the present application, however, the Applicant traverses the restriction of Group I and II in light of the amendments made above where Claim 12 (and thus those claims which depend therefrom (i.e. Claims 13-23 and 25-26)) has been amended to depend from Claim 1. Applicant further traverses the restriction of Group I and Group III as Claim 24 contains each of the limitations of Claim 1, as amended, of Group I and as such if Claim 1 is patentable, then as a dependent claim thereof so to is Claim 24. The Examiner's other restriction requirements in view of Group II are moot in view of the above amendment. Furthermore, the Examiner has failed to show that an undue burden would be placed upon him if all of the claims were allowed to remain in the application. Accordingly, the Applicant respectfully traverses the Examiner's restriction requirement and requests reconsideration thereof.

The Applicant's invention relates to an electret material comprising a blend of a first thermoplastic polymer and a substantially compatible telomer. In a further aspect of the present invention, an electret material is provided comprising a porous substrate such as a nonwoven web of thermoplastic polymer fibers having a permanent or stabilized charge contained therein and wherein at least a portion of the fibers comprise a blend of a first thermoplastic polymer and a telomer compatible with the first thermoplastic polymer. The telomer desirably comprises from about 0.1 to about 25% by weight of the polymeric portion of the film or fiber and even more desirably from about 0.5% to about 15% of the polymeric portion of the film or fiber. In a further aspect, the telomer desirably comprises a backbone substantially similar to that of the first thermoplastic polymer component. As an example, the porous substrate can be a nonwoven web of fibers which comprise from about 90% to about 99%, by weight, polypropylene and from about 1%-10%, by weight, polypropylene backbone with one or more functional end groups.

### **Information Disclosure Statement Absent From File at the PTO**

Paragraph 1 of the Examiner's Office Action notes that the Applicant submitted an IDS on October 1, 1999, however, the Examiner indicates a copy of the IDS is not present in the file. Applicant has attached a duplicate copy of the IDS in question as it was filed on October 1, 1999 along with the papers and return postcard evidencing its submission to and receipt by the USPTO.

### **Response to Rejections under 35 U.S.C. § 112**

By way of the Office Action mailed July 6, 2001, the Examiner rejected Claim 11 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner contends Claim 11 is indefinite because the clause "porous substrate" lacks antecedent basis in the previous claim limitations.

The Applicant has addressed the Examiner's concern with the amendment to the claim identified above. In light of the amendment it is believed no further action on that point is necessitated. Support for the amendment to Claims 2, 3 and 11 may be found in the specification at page 6, line 35 – page 7, line 2. Accordingly, no new matter has been added to the Claims. Furthermore, the amendment to Claim 11 is made only to satisfy the Examiner's objection to lack of antecedent basis and does not limit the scope of the claims or their equivalents, as a substrate is a material according to definition referred to above. The amendments to Claims 2 and 3 are made to eliminate the any further amendments for lack of antecedent basis. As with Claim 11, the amendments of Claims 2 and 3 are made because of a lack of antecedent basis and do not limit the scope of the claims or their equivalents in any way, as a substrate is a material according to definition referred to above.

### **Response to Rejections under 35 U.S.C. § 102**

By way of the Office Action mailed July 6, 2001, the Examiner rejected Claims 1-7 and 11 under 35 U.S.C. § 102(e) as being anticipated by Rousseau et al. (U.S. Patent No. 6,002,017) (hereinafter "Rousseau" or "the '017 patent"). In the Office Action, the Examiner states that Rousseau is concerned with the creation of a nonwoven electret filter web. The Examiner further suggests that the web of Rousseau comprises a first thermoplastic polymer and a thermoplastic telomer present in amounts which anticipate

the amounts claimed in the Applicant's invention. The Examiner also states that the first polymer of Rousseau comprises propylene or ethylene and that the telomer of Rousseau comprises tetrafluoroethylene. Finally, the Examiner states that Rousseau discloses the use of the Applicant's claimed functional end groups.

The Applicant believes the Examiner has misread and/or misapplied the Rousseau reference and respectfully disagrees with the Examiner's rejection. While the Examiner is correct that Rousseau is concerned with the creation of a nonwoven electret filter web, in light of the amendments to the Claims above, it is believed that the support for the Examiner's rejection of the claims of the present invention has been removed and that the Examiner's rejection should be reconsidered and then withdrawn. That is, the reference cited by the Examiner fails to disclose a miscible thermoplastic telomer. The Examiner has cited to column 2, lines 35-50, column 6, lines 32-55 and column 9, lines 58-61 of Rousseau for the proposition that the web of Rousseau comprises a thermoplastic polymer and a thermoplastic telomer, and that the telomer comprises tetrafluoroethylene.

The Applicant disagrees with the Examiner's suggestion that column 8, lines 18-19 of Rousseau discloses the use of the Applicant's claimed functional end groups. Column 8, lines 18-19 of Rousseau discloses linking groups between aliphatic or aromatic ring groups. Linking group Q, which is defined in Rousseau as having 1 or 2 carbon atoms or sulfonamido groups is clearly not an end group. The discussion of group Q in Rousseau clearly teaches a "linking" group which does not satisfy the valence requirements of an end group. It is the Applicant's position that the Examiner has failed to provide any motivation or suggestion that the linking group of Rousseau could be an end group.

Furthermore, a careful examination of the text of Rousseau surrounding that cited by the Examiner reveals that Column 8, lines 14-15 discloses that  $R_f$  is an end group, not linking group Q. However, when read in context,  $R_f$  is specified to be a perfluorinated moiety containing one or more catenary ether oxygen atoms. Catenary refers to the structure  $R-O-R'$ , where the oxygen is sigma bonded between two adjacent groups. Again, the catenary ether oxygen is clearly a linking group and not a functional end group. Thus, it is Applicant's position that the Examiner has incorrectly concluded that Rousseau discloses the functional end groups of the present invention.

Finally, with respect to the Examiner's first rejection, it is the Applicant's position that the lines of Rousseau cited by the Examiner are not referring to a telomer.  $R_f$  and Q

do not refer to a telomer, but rather refer to groups found in the structures listed in columns 6, 7 and 8. In column 6, lines 53-54 where reference is made to telomers, the telomers referred to are a very specific type, specifically tetrafluoroethylene telomers, which do not contain any  $-\text{CH}_2-$  or  $-\text{CH}_2\text{--CH}_2-$  groups.

In view of the amendment above and the remarks which indicate the failure of Rousseau to teach, disclose or suggest a miscible thermoplastic polymer and/or the functional end groups of the present invention, the Applicant respectfully requests that the rejection of Claim 1 and its dependent claims, including Claims 2-7 and 11, be withdrawn.

### **Response to Rejections under 35 U.S.C. § 103**

By way of the Office Action mailed July 6, 2001, the Examiner rejected Claims 8-10 under 35 U.S.C. § 103(a) as being unpatentable over Rousseau. In the Office Action, the Examiner states that Rousseau teaches the use of alkenes as a linking group having 1 or 2 carbon atoms. The Examiner contends that it would have been within the level of ordinary skill in the art to use a linking group having 3 carbon atoms. The Examiner also suggests that the skilled artisan would have been motivated to utilize propylene by the desire to utilize a known functional equivalent of ethylene based on the commercial availability of the two polymers.

The Applicant respectfully disagrees with the Examiner's rejection for the following reasons. Column 8, lines 15-20 of Rousseau discloses an alkylene "linking" group of 1-2 carbons. By definition, the alkylene groups discussed in Rousseau have one of the following structures  $-\text{CH}_2-$  or  $-\text{CH}_2\text{--CH}_2-$ . Neither of these groups are alkenes as the Examiner suggests. The Applicant respectfully submits that the Examiner has confused the nomenclature used to name groups within a molecule with nomenclature used to name olefin monomers. That is alkenes have an empirical formula of  $\text{C}_n\text{H}_{2n}$ , where  $n=2$  or more (i.e.  $n \neq 1$ ).

As discussed above, the linking group the Examiner has referred to in making his rejection, has 1 or 2 carbons. The synthesis of the molecules containing the linking group are described in the Examples (e.g. Example 1). Based on the disclosure of Rousseau, there is nothing which would suggest to one skilled in the art that it is clear that a 3-carbon linking group would work in the methods described therein. The Applicant respectfully suggests the Examiner has failed to provide the requisite motivation or suggestion in making his rejection.

Again, as noted above, Rousseau does not teach the use of alkene linking groups in telomers. Rather, Rousseau teaches a fluorochemical or triazine based additive; however, the fluorochemical additive is not a telomer. Although the rationale of the Examiner's citation to and statement on this portion of Rousseau is unclear, it is believed that the Examiner is using column 9, lines 58-61 to suggest that the telomer disclosed in Rousseau (although in fact the telomer of the present invention is neither taught nor disclosed by Rousseau, as discussed in more detail herein) can be added in the same amounts claimed by the Applicant. The fact that an additive of some kind can be combined in the same percentages as the telomer of the present invention, does not mean that the addition of the telomer of the present invention is obvious in light of Rousseau. This reasoning lacks the required suggestion or motivation needed by the Examiner to support the rejection.

Further still, as the compounds containing the fluorochemical or triazine based additives are well known not to be miscible in polyolefins, the teachings of Rousseau suggest to one skilled in the art that a better electret is formed in phase segregated systems. Thus the teaching of Rousseau is contrary to what is taught and claimed in the present invention. Accordingly, as one skilled in the art would recognize the disclosure of Rousseau teaches away from that which is taught and claimed in the present invention, the Applicant respectfully requests that the Examiner withdraw the rejection based on Rousseau and allow the claims in question.

Furthermore, the Examiner suggests that propylene is a functional equivalent of ethylene. The Examiner's statement is, as one skilled in the art would recognize, clearly incorrect. Propylene requires different polymerization conditions due to different chemical properties. While both propylene and ethylene are alkenes, the "equivalence" ends there.

Further still, as discussed in more detail below, the telomers described in Rousseau are perfluorinated and therefore do not contain any of the  $-CH_2-$  or  $-CH_2-CH_2-$  (methylenic or ethylenic, respectively) linking groups.

For example, in example 2, Rousseau discloses a fluorotelomer from DuPont, VYDAXX™, which is a polytetrafluoroethylene telomer having a MW of 3700 and a melting point of 300°C. Once again, no methylenic or ethylenic linking groups are present. In sum, Rousseau does not teach, disclose or suggest telomers with any "alkene" linking groups, the only telomers disclosed are perfluoro compounds (i.e. those

containing all C-F and no C-H bonds). One skilled in the art will know that the telomers of Rousseau are not miscible in polyolefins as claimed in the present invention.

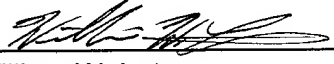
Accordingly, having demonstrated that there are significant differences between the disclosure of Rousseau and the claims of the present invention, it is the Applicant's position that the Examiner's rejection lacks the necessary support to be maintained. Therefore, in light of the arguments stated above, it is believed the Examiner's rejection of Claims 8-10 under 35 U.S.C. §103 is improper and the Applicant respectfully requests the rejection be reconsidered and withdrawn.

Applicant has carefully reviewed the art cited against the present application. None of the cited references, either alone or in combination, disclose a composite construction which has the same or similar distinctive combination of features as set forth and claimed in the above claims and it is this combination of elements which is clearly and patentably distinguishable over the cited art. All claims are believed to be patentably distinguishable over the cited references and in allowable condition. Applicant respectfully requests the rejections of the claims under 35 USC §§ 102, 103 and 112 be reconsidered and withdrawn in light of the preceding amendments and remarks.

For the foregoing reasons, the application and claims are believed to be in condition for allowance and such action is respectfully requested. However, should any questions arise with regard to this matter the Examiner is encouraged to contact the undersigned at (770) 587-7183. Please charge any prosecutorial fees which are due to Kimberly-Clark Worldwide, Inc. deposit account number 11-0875.

Respectfully submitted,

D. Myers

By:   
William W. Letson  
Registration No.: 42,797  
Attorney for Applicant



# CERTIFICATE OF MAILING

William W. Letson, hereby certify that on October 8, 2001 this document is being deposited with the United States Postal Service as first-class mail, postage prepaid, in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231.

By:   
William W. Letson

1. (Amended.) An electret comprising:
  - a porous polymeric material having an electrostatic charge;
  - said porous polymeric material comprising a first thermoplastic polymer and from about 0.1% by weight to about 25% by weight of a miscible thermoplastic telomer.
2. The electret of claim 1 wherein said telomer and said first thermoplastic polymer each comprise a polymer having a significant fraction of the same monomer.
3. (Amended.) The electret of claim 2 wherein said telomer comprises between 0.1% and about 20% of said polymeric material [substrate].
4. (Amended.) The electret of claim 3 wherein said telomer comprises between about 0.5% and 20% of said polymeric material [substrate].
11. (Amended.) The electret of claim 1 wherein said porous material [substrate] is selected from the group consisting of fibrillated films, sintered films, porous films, woven fabrics, foams, nonwoven webs and multilayer laminates thereof.
12. (Amended.) The [An] electret of claim 1, [comprising :]
  - wherein the porous material comprises a nonwoven web [of thermoplastic polymer fibers having an electrostatic charge,]; and wherein [said thermoplastic polymer fibers comprise (i) a] the first thermoplastic polymer is selected from the group consisting of polyolefin and polyamide polymers [and (ii) a telomer wherein said telomer is substantially compatible with said first thermoplastic polymer and comprises between about 0.1% and about 25% by weight of said nonwoven web].